

ABSTRACT OF THE DISCLOSURE

A process for growing by chemical vapor deposition a heteroepitaxial single crystal diamond is disclosed. The process provides a substrate which enables the growth of single crystal diamond which is vapor coated on an iridium film. An intermediate process for producing a composite composition with diamond nuclei is also described. Further described are composite compositions of metal oxide, iridium and single crystal diamond films or diamond nuclei. Single crystal diamond is useful in a variety of electronics and acoustics fields.